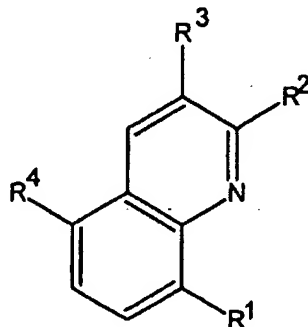


COPY OF ALL CLAIMS

1. (currently amended) A cyclohexenonequinolinoyl <sup>compound</sup> derivative of the formula I



where:

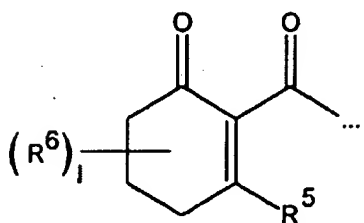
R<sup>1</sup> is hydrogen, nitro, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-haloalkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxyiminomethyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-haloalkoxy, C<sub>1</sub>-C<sub>6</sub>-alkylthio, C<sub>1</sub>-C<sub>6</sub>-haloalkylthio, C<sub>1</sub>-C<sub>6</sub>-alkylsulfonyl, C<sub>1</sub>-C<sub>6</sub>-haloalkylsulfonyl, C<sub>1</sub>-C<sub>6</sub>-alkylsulfonyl, C<sub>1</sub>-C<sub>6</sub>-haloalkylsulfonyl, aminosulfonyl, N-(C<sub>1</sub>-C<sub>6</sub>-alkyl)aminosulfonyl, N, N-di-( C<sub>1</sub>-C<sub>6</sub>-alkyl ) aminosulfonyl, N-(C<sub>1</sub>-C<sub>6</sub>-alkylsulfonyl)amino, N-(C<sub>1</sub>-C<sub>6</sub>-haloalkylsulfonyl)amino, N-(C<sub>1</sub>-C<sub>6</sub>-alkyl)-N-(C<sub>1</sub>-C<sub>6</sub>-alkylsulfonyl)amino, N-(C<sub>1</sub>-C<sub>6</sub>-alkyl)-N-(C<sub>1</sub>-C<sub>6</sub>-haloalkylsulfonyl)amino, phenoxy, heterocycloxy, or phenylthio or heterocyclithio, it <sup>may be</sup> being possible for the four last-mentioned radicals ~~to be~~ partially or fully halogenated and/or <sup>may</sup> ~~to~~ carry one to two of the following one to three of the following substituents :

nitro, cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkyl,

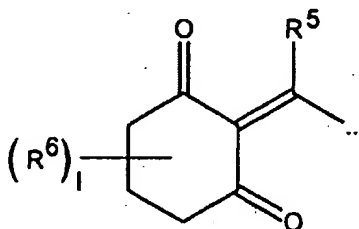
C<sub>1</sub>-C<sub>4</sub>-alkoxy or C<sub>1</sub>-C<sub>4</sub>-haloalkoxy;

R<sup>2</sup>, R<sup>3</sup> are hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-haloalkyl or halogen;

R<sup>4</sup> is a compound IIa or IIb



IIa



IIb

where

R<sup>5</sup> is halogen, OR<sup>7</sup>, SR<sup>7</sup>, SOR<sup>8</sup>, SO<sub>2</sub>R<sup>8</sup>, OSO<sub>2</sub>R<sup>8</sup>, POR<sup>8</sup>R<sup>9</sup>,  
OPR<sup>8</sup>R<sup>9</sup>, OPOR<sup>8</sup>R<sup>9</sup>, OPSR<sup>8</sup>R<sup>9</sup>, NR<sup>10</sup>R<sup>11</sup>, ONR<sup>11</sup>R<sup>12</sup>, N-linked  
heterocyclyl or O-(N-linked heterocyclyl), it being possible for  
the heterocyclyl radical of the two last-mentioned  
substituents to be partially or fully halogenated and/or to

carry one to three of the following radicals:-

nitro, cyano,  $C_1-C_6$ -alkyl,  $C_1-C_6$ -haloalkyl,  $C_1-C_6$ -alkoxy or  $C_1-C_6$ -haloalkoxy;

$R^6$  is nitro, halogen, cyano,  $C_1-C_6$ -alkyl,  $C_1-C_6$ -haloalkyl, di- $(C_1-C_6$ -alkoxy)methyl, di- $(C_1-C_6$ -alkylthio)methyl,  $(C_1-C_6$ -alkoxy) $(C_1-C_6$ -alkylthio)methyl, hydroxyl,  $C_1-C_6$ -alkoxy,  $C_1-C_6$ -haloalkoxy,  $C_1-C_6$ -alkoxycarbonyloxy,  $C_1-C_6$ -alkylthio,  $C_1-C_6$ -haloalkylthio,  $C_1-C_6$ -alkylsulfinyl,  $C_1-C_6$ -haloalkylsulfinyl,  $C_1-C_6$ -alkylsulfonyl,  $C_1-C_6$ -haloalkylsulfonyl,  $C_1-C_6$ -alkylcarbonyl,  $C_1-C_6$ -haloalkylcarbonyl,  $C_1-C_6$ -alkoxycarbonyl or  $C_1-C_6$ -haloalkoxycarbonyl;

or

two radicals, which are linked to the same carbon, together form an  $-O-(CH_2)_m-O-$ ,  $-O-(CH_2)_m-S-$ ,  $-S-(CH_2)_m-S-$ ,  $-O-(CH_2)_n-$  or  $-S-(CH_2)_n-$  chain which is unsubstituted or substituted by one to three radicals from the following group: halogen, cyano,  $C_1-C_4$ -alkyl,  $C_1-C_4$ -haloalkyl or  $C_1-C_4$ -alkoxycarbonyl;

or

two radicals, which are linked to the same carbon,  
together form a  $-(CH_2)_p$  chain which possibly is interrupted  
by oxygen or sulfur and/or is unsubstituted or substituted by  
one to four radicals from the following group:  
halogen, cyano,  $C_1$ - $C_4$ -alkyl,  $C_1$ - $C_4$ -haloalkyl or  $C_1$ - $C_4$ -  
alkoxycarbonyl;

or

two radicals, which are linked to the same carbon,  
together form a methylenide group which is unsubstituted or  
substituted by one or two radicals from the following group:  
halogen, hydroxyl, formyl, cyano,  $C_1$ - $C_6$ -alkyl,  $C_1$ - $C_6$ -  
haloalkyl,  $C_1$ - $C_6$ -alkoxy,  $C_1$ - $C_6$ -haloalkoxy,  $C_1$ - $C_6$ -alkylthio,  $C_1$ -  
 $C_6$ -haloalkylthio,  $C_1$ - $C_6$ -alkylsulfinyl,  $C_1$ - $C_6$ -haloalkylsulfinyl,  
 $C_1$ - $C_6$ -alkylsulfonyl or  $C_1$ - $C_6$ -haloalkylsulfonyl;

or

two radicals, which are linked to the same carbon,  
together with this carbon form a carbonyl group;

or

two radicals, which are linked to different carbons,  
together form a  $-(CH_2)_n$  chain which is unsubstituted or

substituted by one to three radicals from the following group:

halogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, hydroxyl or C<sub>1</sub>-C<sub>6</sub>-alkoxycarbonyl;

R<sup>7</sup> is C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-haloalkenyl, C<sub>3</sub>-C<sub>6</sub>-alkynyl, C<sub>3</sub>-C<sub>6</sub>-haloalkynyl, C<sub>3</sub>-C<sub>6</sub>-cyloalkyl, C<sub>1</sub>-C<sub>20</sub>-alkylcarbonyl, C<sub>2</sub>-C<sub>6</sub>-alkenylcarbonyl, C<sub>2</sub>-C<sub>6</sub>-alkynylcarbonyl, C<sub>3</sub>-C<sub>6</sub>-cyloalkylcarbonyl, C<sub>1</sub>-C<sub>6</sub>-alkoxycarbonyl, C<sub>3</sub>-C<sub>6</sub>-alkenyloxycarbonyl, C<sub>3</sub>-C<sub>6</sub>-alkynyloxycarbonyl, (C<sub>1</sub>-C<sub>20</sub>-alkylthio)carbonyl, C<sub>1</sub>-C<sub>6</sub>-alkylaminocarbonyl, C<sub>3</sub>-C<sub>6</sub>-alkenylaminocarbonyl, C<sub>3</sub>-C<sub>6</sub>-alkynylaminocarbonyl, N,N-di-(C<sub>1</sub>-C<sub>6</sub>-alkyl)aminocarbonyl, N-(C<sub>3</sub>-C<sub>6</sub>-alkenyl)-N-(C<sub>1</sub>-C<sub>6</sub>-alkyl)aminocarbonyl, N-(C<sub>3</sub>-C<sub>6</sub>-alkynyl)-N-(C<sub>1</sub>-C<sub>6</sub>-alkyl)aminocarbonyl, N-(C<sub>1</sub>-C<sub>6</sub>-alkoxy)-N-(C<sub>1</sub>-C<sub>6</sub>-alkyl)aminocarbonyl, N-(C<sub>3</sub>-C<sub>6</sub>-alkenyl)-N-(C<sub>1</sub>-C<sub>6</sub>-alkoxy)aminocarbonyl, N-(C<sub>3</sub>-C<sub>6</sub>-alkynyl)-N-(C<sub>1</sub>-C<sub>6</sub>-alkoxy)aminocarbonyl, di-(C<sub>1</sub>-C<sub>6</sub>-alkyl)aminothiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-alkylcarbonyl-C<sub>1</sub>-C<sub>6</sub>-alkyl,

$C_1-C_6$ -alkoxyimino- $C_1-C_6$ -alkyl,

N-( $C_1-C_6$ -alkylamino) imino- $C_1-C_6$ -alkyl or

N,N-di-( $C_1-C_6$ -alkylamino)imino- $C_1-C_6$ -alkyl, it being possible for

the above-mentioned alkyl, cycloalkyl and alkoxy radicals to be partially or fully halogenated and/or to carry one to three of the following groups:

cyano,  $C_1-C_4$ -alkoxy,  $C_1-C_4$ -alkylthio, di-( $C_1-C_4$ -alkyl) amino,

$C_1-C_4$ -alkylcarbonyl,  $C_1-C_4$ -alkoxycarbonyl,  $C_1-C_4$ -alkoxy- $C_1$ -

$C_4$ -alkoxycarbonyl, di-( $C_1-C_4$ -alkyl)amino- $C_1-C_4$ -

alkoxycarbonyl, hydroxycarbonyl,  $C_1-C_4$ -alkylaminocarbonyl,

di-( $C_1-C_4$ -alkyl)aminocarbonyl, aminocarbonyl,  $C_1-C_4$ -

alkylcarbonyloxy or  $C_3-C_6$ -cycloalkyl;

phenyl, phenyl- $C_1-C_6$ -alkyl, phenylcarbonyl- $C_1-C_6$ -alkyl,

phenylcarbonyl, phenoxycarbonyl, phenoxythiocarbonyl,

phenoxy- $C_1-C_6$ -alkylcarbonyl, phenylaminocarbonyl, N-( $C_1$ -

$C_6$ -alkyl)-N-(phenyl)aminocarbonyl, or phenyl- $C_2-C_6$ -

alkenylcarbonyl, it being possible for the phenyl radical of

the 10 last-mentioned substituents <sup>may</sup> to be partially or fully

halogenated and/or <sup>may</sup> to carry one to three of the following

radicals:

phenyl, phenyl- $C_1-C_6$ -alkyl, heterocyclyl- $C_1-C_6$ -alkyl, phenylcarbonyl- $C_1-C_6$ -

alkyl, heterocyclylcarbonyl- $C_1-C_6$ -alkyl, phenylcarbonyl,

~~heterocyclylcarbonyl, phenoxycarbonyl, heterocyclyloxycarbonyl,  
phenoxythiocarbonyl, heterocyclyloxythiocarbonyl, phenoxy-C<sub>1</sub>-C<sub>6</sub>-  
alkylcarbonyl, heterocyclyloxy-C<sub>1</sub>-C<sub>6</sub>-alkylcarbonyl, phenylaminocarbonyl,  
N-(C<sub>1</sub>-C<sub>6</sub>-alkyl)-N-(phenyl)aminocarbonyl, heterocyclylaminocarbonyl, N-  
(C<sub>1</sub>-C<sub>6</sub>-alkyl)-N-(heterocyclyl)aminocarbonyl, phenyl-C<sub>2</sub>-C<sub>6</sub>-alkenylcarbonyl  
or heterocyclyl-C<sub>2</sub>-C<sub>6</sub>-alkenylcarbonyl, it being possible for the phenyl and  
the heterocyclyl radical of the 20 last-mentioned substituents to be  
partially or fully halogenated and/or to carry one to three of the following  
radicals:~~

~~nitro, cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-halogenalkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy or  
C<sub>1</sub>-C<sub>4</sub>-haloalkoxy;~~

~~R<sup>8</sup>, R<sup>9</sup> are C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-haloalkenyl, C<sub>3</sub>-C<sub>6</sub>-  
alkynyl, C<sub>3</sub>-C<sub>6</sub>-haloalkynyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxyl, C<sub>1</sub>-C<sub>6</sub>-  
alkoxy, amino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, C<sub>1</sub>-C<sub>6</sub>-haloalkylamino, di-  
(C<sub>1</sub>-C<sub>6</sub>-alkyl) amino or di-(C<sub>1</sub>-C<sub>6</sub>-haloalkyl)amino, it being  
possible for the abovementioned alkyl, cycloalkyl and alkoxy  
radicals to be partially or fully halogenated and/or to carry  
one to three of the following groups:~~

~~cyano, C<sub>1</sub>-C<sub>4</sub>-alkoxy, C<sub>1</sub>-C<sub>4</sub>-alkylthio, di-(C<sub>1</sub>-C<sub>4</sub>-alkyl) amino,  
C<sub>1</sub>-C<sub>4</sub>-alkylcarbonyl, C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-  
C<sub>4</sub>-alkoxycarbonyl, di-(C<sub>1</sub>-C<sub>4</sub>-alkyl)amino-C<sub>1</sub>-C<sub>4</sub>-~~

alkoxycarbonyl,

hydroxycarbonyl, C<sub>1</sub>-C<sub>4</sub>-alkylaminocarbonyl, di-(C<sub>1</sub>-C<sub>4</sub>-alkyl)aminocarbonyl, aminocarbonyl, C<sub>1</sub>-C<sub>4</sub>-alkylcarbonyloxy or C<sub>3</sub>-C<sub>6</sub>-cycloalkyl;

~~phenyl, phenyl-C<sub>1</sub>-C<sub>6</sub>-alkyl, phenoxy, it being possible for the~~  
~~phenyl radical of the last-mentioned substituents to be~~  
~~partially or fully halogenated and/or to carry one to three of~~  
~~the following radicals:~~  
*may*  
*may*

~~phenyl, heterocyclyl, phenyl-C<sub>1</sub>-C<sub>6</sub>-alkyl, heterocyclyl-C<sub>1</sub>-C<sub>6</sub>-alkyl, phenoxy,~~  
~~heterocyclyloxy, it being possible for the phenyl and the heterocyclyl~~  
~~radical of the last-mentioned substituents to be partially or fully~~  
~~halogenated and/or to carry one to three of the following radicals:~~  
~~nitro, cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy or C<sub>1</sub>-~~  
~~C<sub>4</sub>-haloalkoxy;~~

R<sup>10</sup> is C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-haloalkenyl, C<sub>3</sub>-C<sub>6</sub>-alkynyl, C<sub>3</sub>-C<sub>6</sub>-haloalkynyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>3</sub>-C<sub>6</sub>-alkenyloxy, C<sub>3</sub>-C<sub>6</sub>-alkynyloxy, amino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, di-(C<sub>1</sub>-C<sub>6</sub>-alkyl)amino or C<sub>1</sub>-C<sub>6</sub>-alkylcarbonylamino, where the abovementioned alkyl, cycloalkyl and alkoxy radicals may be partially or fully halogenated and/or may carry one to three radicals from the



following group:

cyano, C<sub>1</sub>-C<sub>4</sub>-alkoxy, C<sub>1</sub>-C<sub>4</sub>-alkylthio, di-(C<sub>1</sub>-C<sub>4</sub>-alkyl)amino, C<sub>1</sub>-C<sub>4</sub>-alkylcarbonyl, C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl, di-(C<sub>1</sub>-C<sub>4</sub>-alkyl)amino-C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl, hydroxycarbonyl, C<sub>1</sub>-C<sub>4</sub>-alkylaminocarbonyl, di-(C<sub>1</sub>-C<sub>4</sub>-alkyl)aminocarbonyl, aminocarbonyl, C<sub>1</sub>-C<sub>4</sub>-alkylcarbonyloxy or C<sub>3</sub>-C<sub>6</sub>-cycloalkyl;

phenyl, or phenyl-C<sub>1</sub>-C<sub>6</sub>-alkyl, where the phenyl radical of the two last-mentioned substituents may be partially or fully halogenated and/or may carry one to three of the following radicals:

phenyl, heterocyclyl, phenyl-C<sub>1</sub>-C<sub>6</sub>-alkyl or heterocyclyl-C<sub>1</sub>-C<sub>6</sub>-alkyl, where the phenyl or heterocyclyl radical of the four last-mentioned substituents may be partially or fully halogenated and/or may carry one to three of the following radicals:-

nitro, cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy or C<sub>1</sub>-C<sub>4</sub>-haloalkoxy;

R<sup>11</sup>, R<sup>12</sup> are C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkynyl or C<sub>1</sub>-C<sub>6</sub>-alkylcarbonyl;

l is 0 to 6;

m is 2 to 4;

n is 1 to 5;

p is 2 to 5;

and their agriculturally useful salts.

2. (currently amended) A cyclohexenonequinolinoyl <sup>compound</sup> derivative of the formula I as claimed in claim 1 where

R<sup>1</sup> is halogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-haloalkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-alkylthio, heterocyclyloxy or phenylthio, it being possible for the two last-mentioned radical radicals <sup>may</sup> to be partially or fully halogenated and/or <sup>may</sup> to carry one to two carry one to three of the substituents mentioned below:

nitro, cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy or C<sub>1</sub>-C<sub>4</sub>-haloalkoxy;

R<sup>5</sup> is halogen, OR<sup>7</sup>, SR<sup>7</sup>, SOR<sup>8</sup>, SO<sub>2</sub>R<sup>8</sup>, OSO<sub>2</sub>R<sup>8</sup>, OPR<sup>8</sup>R<sup>9</sup>, OPOR<sup>8</sup>R<sup>9</sup>, OPSR<sup>8</sup>R<sup>9</sup>, NR<sup>10</sup>R<sup>11</sup> or N-bonded heterocyclyl, which is unsubstituted or partially or fully halogenated and/or carries one to three of the following radicals:

nitro, cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy or C<sub>1</sub>-C<sub>4</sub>-haloalkoxy.

3. (currently amended) A cyclohexenonequinolinoyl <sup>compound</sup> derivative of the formula I as claimed in claim I, where

R<sup>5</sup> is halogen, OR<sup>7</sup>, NR<sup>10</sup>R<sup>11</sup> or N-bonded heterocyclyl which is unsubstituted

~~or partially or fully halogenated and/or carries one to three of the following radicals:~~

~~nitro, cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy or C<sub>1</sub>-C<sub>4</sub>-haloalkoxy.~~

4. (previously presented) A cyclohexenonequinolinoyl <sup>compound</sup> derivative of the formula I as claimed in claim 1, where

R<sup>7</sup> is C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>20</sub>-alkylcarbonyl, C<sub>1</sub>-C<sub>6</sub>-alkoxycarbonyl, (C<sub>1</sub>-C<sub>20</sub>-alkylthio)carbonyl, N,N-di-(C<sub>1</sub>-C<sub>6</sub>-alkyl)aminocarbonyl, phenyl, phenylcarbonyl or phenoxy-C<sub>1</sub>-C<sub>6</sub>-alkylcarbonyl, it being possible for the phenyl radical of the three last-mentioned substituents to be partially or fully halogenated and/or to carry one to three of the following radicals:

nitro, cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy or C<sub>1</sub>-C<sub>4</sub>-haloalkoxy;

R<sup>10</sup> is C<sub>1</sub>-C<sub>6</sub>-alkyl or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

R<sup>11</sup> is C<sub>1</sub>-C<sub>6</sub>-alkyl.

5. (previously presented) A cyclohexenonequinolinoyl <sup>compound</sup> derivative of the formula I as claimed in claim 1, where

R<sup>6</sup> is nitro, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-haloalkyl, di-(C<sub>1</sub>-

C<sub>6</sub>-alkoxy)methyl, di-(C<sub>1</sub>-C<sub>6</sub>-alkylthio)methyl, (C<sub>1</sub>-C<sub>6</sub>-alkoxy)(C<sub>1</sub>-C<sub>6</sub>-alkylthio)-methyl, hydroxyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-haloalkoxy, C<sub>1</sub>-C<sub>6</sub>-alkoxycarbonyloxy, C<sub>1</sub>-C<sub>6</sub>-alkylthio, C<sub>1</sub>-C<sub>6</sub>-haloalkylthio, C<sub>1</sub>-C<sub>6</sub>-alkylsulfinyl, C<sub>1</sub>-C<sub>6</sub>-haloalkylsulfinyl, C<sub>1</sub>-C<sub>6</sub>-alkylsulfonyl, C<sub>1</sub>-C<sub>6</sub>-haloalkylsulfonyl, C<sub>1</sub>-C<sub>6</sub>-alkylcarbonyl, C<sub>1</sub>-C<sub>6</sub>-haloalkylcarbonyl, C<sub>1</sub>-C<sub>6</sub>-alkoxycarbonyl or C<sub>1</sub>-C<sub>6</sub>-haloalkoxycarbonyl;

or

two radicals, which are linked to the same carbon, together form an -O-(CH<sub>2</sub>)<sub>m</sub>-O-, -O-(CH<sub>2</sub>)<sub>m</sub>-S-, -S-(CH<sub>2</sub>)<sub>m</sub>-S-, -O-(CH<sub>2</sub>)<sub>n</sub>- or -S-(CH<sub>2</sub>)<sub>n</sub> chain which is unsubstituted or substituted by one to three radicals from the following group:

halogen, cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkyl or C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl;

or

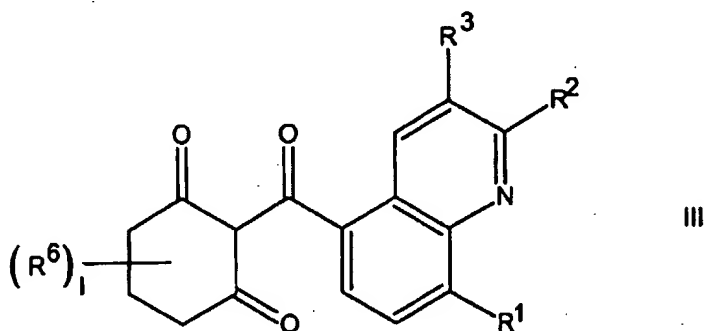
two radicals, which are linked to the same carbon, together form a -(CH<sub>2</sub>)<sub>p</sub> chain which <sup>may be</sup> ~~possibly is~~ interrupted by oxygen or sulfur and which is unsubstituted or substituted by one to four radicals from the following group:

halogen, cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkyl or C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl;

or

two radicals , which are linked to the same carbon, together with this carbon form a carbonyl group.

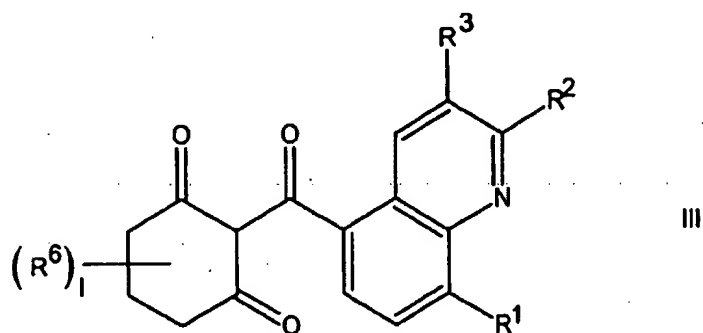
6. (previously presented) A process for preparing compounds of the formula I as claimed in claim 1 where  $R^5$  = halogen, which comprises reacting a cyclohexanedione derivative of the formula III,



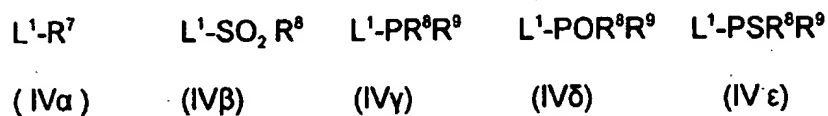
where the variables  $R^1$  to  $R^3$ , and I are each as defined in claim 1, with a halogenating agent.

7. (previously presented) A process for preparing compounds of the formula I as claimed in claim 1 where  $R^5$  =  $OR^7$ ,  $OSO_2R^8$ ,  $OPR^8R^9$ ,  $OPOR^8R^9$  or  $OPSR^8R^9$ ,

which comprises reacting a cyclohexanedione derivative of the formula III,



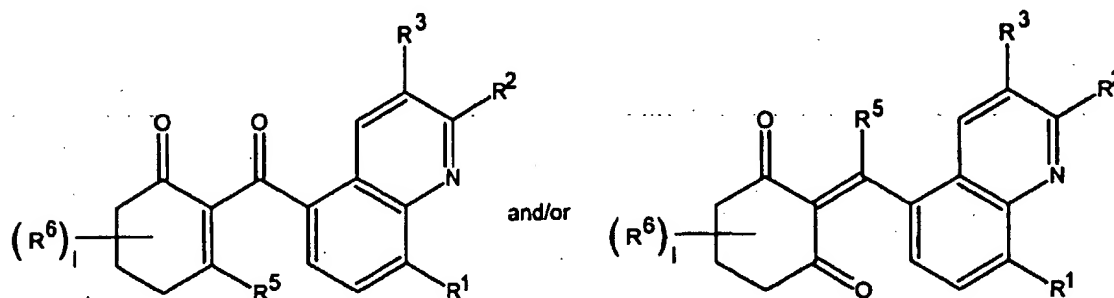
where the variables  $R^1$  to  $R^3$ , and  $I$  are each as defined in claim 1, with a compound of the formula IV $\alpha$ , IV $\beta$ , IV $\gamma$ , IV $\delta$  or IV $\epsilon$ ,



where the variables  $R^7$  to  $R^9$  are each as defined in claim 1 and  $L^1$  is a nucleophilically replaceable leaving group.

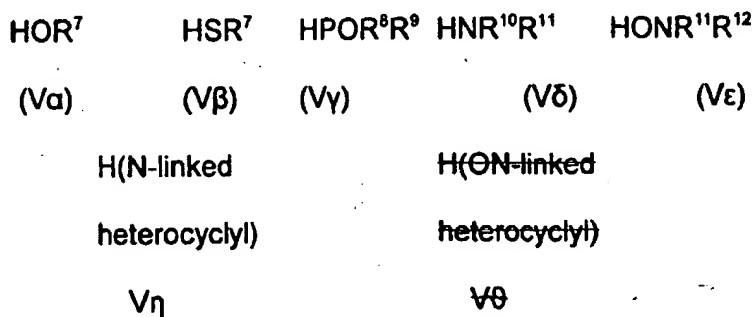
8. (currently amended) A process for preparing compounds of the formula I as claimed

in claim 1 where  $R^5 = OR^7, SR^7, POR^8R^9, NR^{10}R^{11}, ONR^{11}R^{12}$ , or N-linked heterocyclyl ~~N-linked heterocyclyl~~ or ~~O-(N-linked heterocyclyl)~~, which comprises reacting a compound of the formula I  $\alpha$  ( $= I$  where  $R^5 = \text{halogen}, OSO_2R^9$ ),



I where  $R^5 = \text{halogen or } OSO_2R^9$

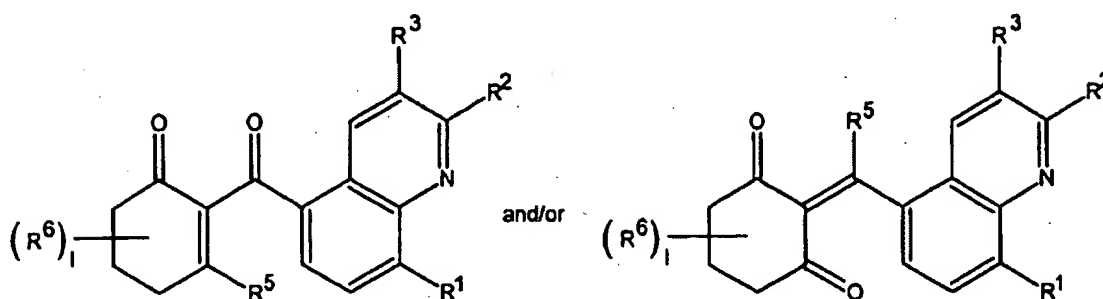
where the variables  $R^1$  to  $R^3, R^6$  and  $I$  are each as defined in claim 1, with a compound of the formula  $V\alpha, V\beta, V\gamma, V\delta, V\epsilon, V\eta, V\theta$ ,



where the variables  $R^7$  to  $R^{12}$  are each as defined in claim 1, if appropriate

in the presence of a base.

9. (previously presented) A process for preparing compounds of the formula I as claimed in claim 1, where  $R^5 = \text{SOR}^8$ ,  $\text{SO}_2\text{R}^8$ , which comprises reacting a compound of the formula I $\beta$  ( $\equiv$  I where  $R^5 = \text{SR}^8$ ),



I where  $R^5 = \text{SR}^8$

where the variables  $R^1$  to  $R^8$  and I are each as defined in claim 1, with an oxidizing agent.

10. (previously presented) A composition, comprising a herbicidally effective amount of at least one cyclohexenonequinolinoyl <sup>compound</sup> derivative of the formula I or an agriculturally useful salt of formula I as claimed in claim 1 and auxiliaries which



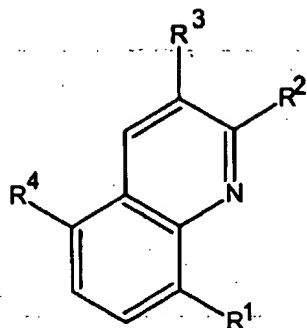
are conventionally used for formulating crop protection agents.

11. (previously presented) A process for preparing a composition as claimed in claim 10, which comprises mixing a herbicidally effective amount of at least one cyclohexenonequinolinoyl derivative of the formula I or an agriculturally useful salt of formula I and auxiliaries which are conventionally used for formulating crop protection agents.

12. (previously presented) A method for controlling undesirable vegetation, which comprises allowing a herbicidally effective amount of at least one cyclohexenonequinolinoyl derivative of the formula I or an agriculturally useful salt of formula I as claimed in claim 1 to act on plants, their habitat and/or on seeds.

13. (canceled)

13 14. (currently amended) A cyclohexenonequinolinoyl <sup>compound</sup> ~~derivative~~ of the formula I



where:

R<sup>1</sup> is hydrogen, nitro, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-haloalkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxyiminomethyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-haloalkoxy, C<sub>1</sub>-C<sub>6</sub>-alkylthio, C<sub>1</sub>-C<sub>6</sub>-haloalkylthio, C<sub>1</sub>-C<sub>6</sub>-alkylsulfinyl, C<sub>1</sub>-C<sub>6</sub>-haloalkylsulfinyl, C<sub>1</sub>-C<sub>6</sub>-alkylsulfonyl, C<sub>1</sub>-C<sub>6</sub>-haloalkylsulfonyl, aminosulfonyl, N-(C<sub>1</sub>-C<sub>6</sub>-alkyl)aminosulfonyl, N, N-di-( C<sub>1</sub>-C<sub>6</sub>-alkyl ) aminosulfonyl , N-(C<sub>1</sub>-C<sub>6</sub>-alkylsulfonyl)amino, N-(C<sub>1</sub>-C<sub>6</sub>-haloalkylsulfonyl)amino, N-(C<sub>1</sub>-C<sub>6</sub>-alkyl)-N-(C<sub>1</sub>-C<sub>6</sub>-alkylsulfonyl)amino,

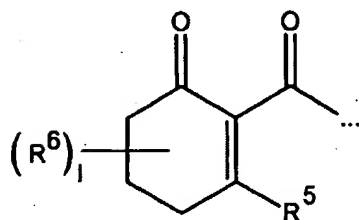
N-(C<sub>1</sub>-C<sub>6</sub>-alkyl)-N-(C<sub>1</sub>-C<sub>6</sub>-haloalkylsulfonyl)amino,  
 phenoxy, heterocycloxy, or phenylthio or heterocyclithio, it being  
~~possible for the two~~ <sup>may</sup> four last-mentioned radicals ~~to be~~ <sup>may</sup> partially or fully  
 halogenated and/or ~~to~~ <sup>may</sup> carry one to two ~~one to three~~ of the following  
 substituents :

nitro, cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkyl,

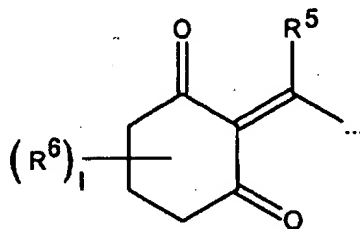
C<sub>1</sub>-C<sub>4</sub>-alkoxy or C<sub>1</sub>-C<sub>4</sub>-haloalkoxy;

R<sup>2</sup>, R<sup>3</sup> are hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-haloalkyl or halogen;

R<sup>4</sup> is a compound IIa



IIa



IIb

where

R<sup>5</sup> is halogen, OR<sup>7</sup>, SR<sup>7</sup>, SOR<sup>8</sup>, SO<sub>2</sub>R<sup>8</sup>, OSO<sub>2</sub>R<sup>8</sup>, POR<sup>8</sup>R<sup>9</sup>,

OPR<sup>8</sup>R<sup>9</sup>, OPOR<sup>8</sup>R<sup>9</sup>, OPSR<sup>8</sup>R<sup>9</sup>, NR<sup>10</sup>R<sup>11</sup>, ONR<sup>11</sup>R<sup>12</sup>, N-linked heterocyclyl or O-(N-linked heterocyclyl), it being possible for the heterocyclyl radical of the two last-mentioned substituents to be partially or fully halogenated and/or to carry one to three of the following radicals:-  
nitro, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-haloalkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy or C<sub>1</sub>-C<sub>6</sub>-haloalkoxy;

R<sup>6</sup> is nitro, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-haloalkyl, di-(C<sub>1</sub>-C<sub>6</sub>-alkoxy)methyl, di-(C<sub>1</sub>-C<sub>6</sub>-alkylthio)methyl, (C<sub>1</sub>-C<sub>6</sub>-alkoxy)(C<sub>1</sub>-C<sub>6</sub>-alkylthio)methyl, hydroxyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-haloalkoxy, C<sub>1</sub>-C<sub>6</sub>-alkoxycarbonyloxy, C<sub>1</sub>-C<sub>6</sub>-alkylthio, C<sub>1</sub>-C<sub>6</sub>-haloalkylthio, C<sub>1</sub>-C<sub>6</sub>-alkylsulfinyl, C<sub>1</sub>-C<sub>6</sub>-haloalkylsulfinyl, C<sub>1</sub>-C<sub>6</sub>-alkylsulfonyl, C<sub>1</sub>-C<sub>6</sub>-haloalkylsulfonyl, C<sub>1</sub>-C<sub>6</sub>-alkylcarbonyl, C<sub>1</sub>-C<sub>6</sub>-haloalkylcarbonyl, C<sub>1</sub>-C<sub>6</sub>-alkoxycarbonyl or C<sub>1</sub>-C<sub>6</sub>-haloalkoxycarbonyl;

or

two radicals, which are linked to the same carbon, together form an -O-(CH<sub>2</sub>)<sub>m</sub>-O-, -O-(CH<sub>2</sub>)<sub>m</sub>-S-, -S-(CH<sub>2</sub>)<sub>m</sub>-S-, -

O-(CH<sub>2</sub>)<sub>n</sub>- or -S-(CH<sub>2</sub>)<sub>n</sub> chain which is unsubstituted or substituted by one to three radicals from the following group:

halogen, cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkyl or C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl;

or

two radicals, which are linked to the same carbon, together form a -(CH<sub>2</sub>)<sub>p</sub> chain which <sup>may be</sup> ~~possibly is~~ interrupted by oxygen or sulfur and/or is unsubstituted or substituted by one to four radicals from the following group:

halogen, cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkyl or C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl;

or

two radicals, which are linked to the same carbon, together form a methylenedioxy group which is unsubstituted or substituted by one or two radicals from the following group:

halogen, hydroxyl, formyl, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-haloalkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-haloalkoxy, C<sub>1</sub>-C<sub>6</sub>-alkylthio, C<sub>1</sub>-C<sub>6</sub>-haloalkylthio, C<sub>1</sub>-C<sub>6</sub>-alkylsulfinyl, C<sub>1</sub>-C<sub>6</sub>-haloalkylsulfinyl, C<sub>1</sub>-C<sub>6</sub>-alkylsulfonyl or C<sub>1</sub>-C<sub>6</sub>-haloalkylsulfonyl;

or

two radicals, which are linked to the same carbon,

together with this carbon form a carbonyl group;

or

two radicals, which are linked to different carbons,  
together form a  $-(CH_2)_n$  chain which is unsubstituted or  
substituted by one to three radicals from the following group:  
halogen,  $C_1$ - $C_6$ -alkyl,  $C_1$ - $C_6$ -alkoxy, hydroxyl or  $C_1$ - $C_6$ -  
alkoxycarbonyl;

$R^7$  is  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -haloalkenyl,  
 $C_3$ - $C_6$ -alkynyl,  $C_3$ - $C_6$ -haloalkynyl,  $C_3$ - $C_6$ -cyloalkyl,  
 $C_1$ - $C_{20}$ -alkylcarbonyl,  $C_2$ - $C_6$ -alkenylcarbonyl,  
 $C_2$ - $C_6$ -alkynylcarbonyl,  $C_3$ - $C_6$ -cyloalkylcarbonyl,  
 $C_1$ - $C_6$ -alkoxycarbonyl,  $C_3$ - $C_6$ -alkenyloxycarbonyl,  
 $C_3$ - $C_6$ -alkynyloxycarbonyl,  
( $C_1$ - $C_{20}$ -alkylthio)carbonyl,  
 $C_1$ - $C_6$ -alkylaminocarbonyl,  
 $C_3$ - $C_6$ -alkenylaminocarbonyl,  
 $C_3$ - $C_6$ -alkynylaminocarbonyl,  
N,N-di-( $C_1$ - $C_6$ -alkyl)aminocarbonyl,  
N-( $C_3$ - $C_6$ -alkenyl)-N-( $C_1$ - $C_6$ -alkyl)aminocarbonyl,  
N-( $C_3$ - $C_6$ -alkynyl)-N-( $C_1$ - $C_6$ -alkyl)aminocarbonyl,

N-(C<sub>1</sub>-C<sub>6</sub>-alkoxy)-

N-(C<sub>1</sub>-C<sub>6</sub>-alkyl) aminocarbonyl, N-(C<sub>3</sub>-C<sub>6</sub>-alkenyl)-

N-(C<sub>1</sub>-C<sub>6</sub>-alkoxy) aminocarbonyl, N-(C<sub>3</sub>-C<sub>6</sub>-alkynyl)-

N-(C<sub>1</sub>-C<sub>6</sub>-alkoxy) aminocarbonyl, di-(C<sub>1</sub>-C<sub>6</sub>-alkyl)-

aminothiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-alkylcarbonyl-C<sub>1</sub>-C<sub>6</sub>-alkyl,

C<sub>1</sub>-C<sub>6</sub>-alkoxyimino-C<sub>1</sub>-C<sub>6</sub>-alkyl,

N-(C<sub>1</sub>-C<sub>6</sub>-alkylamino) imino-C<sub>1</sub>-C<sub>6</sub>-alkyl or

N,N-di-(C<sub>1</sub>-C<sub>6</sub>-alkylamino)imino-C<sub>1</sub>-C<sub>6</sub>-alkyl, it being possible for

the above-mentioned alkyl, cycloalkyl and alkoxy radicals to be partially or

fully halogenated and/or to carry one to three of the following groups:

cyano, C<sub>1</sub>-C<sub>4</sub>-alkoxy, C<sub>1</sub>-C<sub>4</sub>-alkylthio, di-(C<sub>1</sub>-C<sub>4</sub>-alkyl) amino, C<sub>1</sub>-C<sub>4</sub>-

alkylcarbonyl, C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl,

di-(C<sub>1</sub>-C<sub>4</sub>-alkyl)amino-C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl, hydroxycarbonyl, C<sub>1</sub>-C<sub>4</sub>-

alkylaminocarbonyl, di-(C<sub>1</sub>-C<sub>4</sub>-alkyl)aminocarbonyl, aminocarbonyl, C<sub>1</sub>-C<sub>4</sub>-

alkylcarbonyloxy or C<sub>3</sub>-C<sub>6</sub>-cycloalkyl;

phenyl, phenyl-C<sub>1</sub>-C<sub>6</sub>-alkyl, phenylcarbonyl-C<sub>1</sub>-C<sub>6</sub>-alkyl, phenylcarbonyl,

phenoxycarbonyl, phenoxythiocarbonyl, phenoxy-C<sub>1</sub>-C<sub>6</sub>-alkylcarbonyl,

phenylaminocarbonyl, N-(C<sub>1</sub>-C<sub>6</sub>-alkyl)-N-(phenyl)aminocarbonyl, or

phenyl-C<sub>2</sub>-C<sub>6</sub>-alkenylcarbonyl, it being possible for the phenyl radical of

the 10 last-mentioned substituents <sup>may</sup> to be partially or fully halogenated

and/or <sup>may</sup> to carry one to three of the following radicals:

~~phenyl, heterocyclyl, phenyl-C<sub>1</sub>-C<sub>6</sub>-alkyl, heterocyclyl-C<sub>1</sub>-C<sub>6</sub>-alkyl,  
phenylcarbonyl-C<sub>1</sub>-C<sub>6</sub>-alkyl, heterocyclylcarbonyl-C<sub>1</sub>-C<sub>6</sub>-alkyl,  
phenylcarbonyl, heterocyclylcarbonyl, phenoxycarbonyl,  
heterocyclylloxycarbonyl, phenoxythiocarbonyl,  
heterocyclylloxythiocarbonyl, phenoxy-C<sub>1</sub>-C<sub>6</sub>-alkylcarbonyl,  
heterocyclylloxy-C<sub>1</sub>-C<sub>6</sub>-alkylcarbonyl, phenylaminocarbonyl, N-(C<sub>1</sub>-C<sub>6</sub>-  
alkyl)-N-(phenyl)aminocarbonyl, heterocyclylaminocarbonyl, N-(C<sub>1</sub>-C<sub>6</sub>-  
alkyl)-N-(heterocyclyl)aminocarbonyl, phenyl-C<sub>2</sub>-C<sub>6</sub>-alkenylcarbonyl or  
heterocyclyl-C<sub>2</sub>-C<sub>6</sub>-alkenylcarbonyl, it being possible for the phenyl and  
the heterocyclyl radical of the 20 last-mentioned substituents to be  
partially or fully halogenated and/or to carry one to three of the following  
radicals:~~

~~nitro, cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-halogenalkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy or C<sub>1</sub>-C<sub>4</sub>-  
haloalkoxy;~~

~~R<sup>8</sup>, R<sup>9</sup> are C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-haloalkenyl, C<sub>3</sub>-C<sub>6</sub>-  
alkynyl, C<sub>3</sub>-C<sub>6</sub>-haloalkynyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxyl, C<sub>1</sub>-C<sub>6</sub>-  
alkoxy, amino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, C<sub>1</sub>-C<sub>6</sub>-haloalkylamino, di-  
(C<sub>1</sub>-C<sub>6</sub>-alkyl) amino or di-(C<sub>1</sub>-C<sub>6</sub>-haloalkyl) amino, it being  
possible for the abovementioned alkyl, cycloalkyl and alkoxy  
radicals <sup>may</sup> to be partially or fully halogenated and/or <sup>may</sup> to carry  
one to three of the following groups:~~



cyano, C<sub>1</sub>-C<sub>4</sub>-alkoxy, C<sub>1</sub>-C<sub>4</sub>-alkylthio, di-(C<sub>1</sub>-C<sub>4</sub>-alkyl)amino, C<sub>1</sub>-C<sub>4</sub>-alkylcarbonyl, C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl, di-(C<sub>1</sub>-C<sub>4</sub>-alkyl)amino-C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl, hydroxycarbonyl, C<sub>1</sub>-C<sub>4</sub>-alkylaminocarbonyl, di-(C<sub>1</sub>-C<sub>4</sub>-alkyl)aminocarbonyl, aminocarbonyl, C<sub>1</sub>-C<sub>4</sub>-alkylcarbonyloxy or C<sub>3</sub>-C<sub>6</sub>-cycloalkyl;

phenyl, phenyl-C<sub>1</sub>-C<sub>6</sub>-alkyl, phenoxy, it being possible for the phenyl radical of the last-mentioned substituents <sup>may</sup> to be partially or fully halogenated and/or <sup>may</sup> to carry one to three of the following radicals:

phenyl, heterocyclyl, phenyl-C<sub>1</sub>-C<sub>6</sub>-alkyl, heterocyclyl-C<sub>1</sub>-C<sub>6</sub>-alkyl, phenoxy, heterocyclyloxy, it being possible for the phenyl and the heterocyclyl radical of the last-mentioned substituents to be partially or fully halogenated and/or to carry one to three of the following radicals:  
nitro, cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy or C<sub>1</sub>-C<sub>4</sub>-haloalkoxy;

R<sup>10</sup> is C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-haloalkenyl, C<sub>3</sub>-C<sub>6</sub>-alkynyl, C<sub>3</sub>-C<sub>6</sub>-haloalkynyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>3</sub>-C<sub>6</sub>-alkenyloxy, C<sub>3</sub>-C<sub>6</sub>-alkynyloxy, amino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, di-(C<sub>1</sub>-C<sub>6</sub>-alkyl)amino or C<sub>1</sub>-C<sub>6</sub>-alkylcarbonylamino, it being possible for the abovementioned alkyl, cycloalkyl and alkoxy radicals to be

partially or fully halogenated and/or to carry one to three radicals from the following group:

cyano, C<sub>1</sub>-C<sub>4</sub>-alkoxy, C<sub>1</sub>-C<sub>4</sub>-alkylthio, di-(C<sub>1</sub>-C<sub>4</sub>-alkyl)amino, C<sub>1</sub>-C<sub>4</sub>-alkylcarbonyl, C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl, di-(C<sub>1</sub>-C<sub>4</sub>-alkyl)amino-C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl, hydroxycarbonyl, C<sub>1</sub>-C<sub>4</sub>-alkylaminocarbonyl, di-(C<sub>1</sub>-C<sub>4</sub>-alkyl)aminocarbonyl, aminocarbonyl, C<sub>1</sub>-C<sub>4</sub>-alkylcarbonyloxy or C<sub>3</sub>-C<sub>6</sub>-cycloalkyl;

phenyl, or phenyl-C<sub>1</sub>-C<sub>6</sub>-alkyl, it being possible for the phenyl radical of the two last-mentioned substituents <sup>may</sup> to be partially or fully halogenated and/or <sup>may</sup> to carry one to three of the following radicals:

phenyl, heterocyclyl, phenyl-C<sub>1</sub>-C<sub>6</sub>-alkyl or heterocyclyl-C<sub>1</sub>-C<sub>6</sub>-alkyl, it being possible for the phenyl or heterocyclyl radical of the four last-mentioned substituents to be partially or fully halogenated and/or to carry one to three of the following radicals:

nitro, cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy or C<sub>1</sub>-C<sub>4</sub>-haloalkoxy;

R<sup>11</sup>, R<sup>12</sup> are C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkynyl or C<sub>1</sub>-C<sub>6</sub>-alkylcarbonyl;

l is 0 to 6;

m is 2 to 4;

n is 1 to 5;

p is 2 to 5;

and their agriculturally useful salts.

14 15. (currently amended) A cyclohexenonequinolinoyl <sup>compound</sup> derivative of the formula I as claimed in claim <sup>13</sup> 14, where

R<sup>1</sup> is halogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-haloalkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-alkylthio, heterocycloxy or phenylthio, it being possible for the two last-mentioned radical -radicals to be partially or fully halogenated and/or to carry one to two one to three of the substituents mentioned below:

nitro, cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy or C<sub>1</sub>-C<sub>4</sub>-haloalkoxy;

R<sup>5</sup> is halogen, OR<sup>7</sup>, SR<sup>7</sup>, SOR<sup>8</sup>, SO<sub>2</sub>R<sup>8</sup>, OSO<sub>2</sub>R<sup>8</sup>, OPR<sup>8</sup>R<sup>9</sup>, OPOR<sup>8</sup>R<sup>9</sup>, OPSR<sup>8</sup>R<sup>9</sup>, NR<sup>10</sup>R<sup>11</sup> or N-bonded heterocyclyl which is unsubstituted or partially or fully halogenated and/or carries one to three of the following radicals:

nitro, cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy or C<sub>1</sub>-C<sub>4</sub>-haloalkoxy.

15 16. (currently amended) A cyclohexenonequinolinoyl <sup>compound</sup> derivative of the formula I as claimed in claim <sup>13</sup> 14, where

$R^5$  is halogen,  $OR^7$ ,  $NR^{10}R^{11}$  or N-bonded heterocyclyl which is unsubstituted or partially or fully halogenated and/or carries one to three of the following radicals:

nitro, cyano,  $C_1-C_4$ -alkyl,  $C_1-C_4$ -haloalkyl,  $C_1-C_4$ -alkoxy or  $C_1-C_4$ -haloalkoxy.

16 17. (currently amended) A <sup>Compound</sup> cyclohexenonequinolinoyl derivative of the formula I as claimed in claim <sup>13</sup> 14, where

$R^7$  is  $C_1-C_6$ -alkyl,  $C_1-C_{20}$ -alkylcarbonyl,  $C_1-C_6$ -alkoxycarbonyl,  $(C_1-C_{20}$ -alkylthio)carbonyl, N,N-di- $(C_1-C_6$ -alkyl)aminocarbonyl, phenyl, phenylcarbonyl or phenoxy- $C_1-C_6$ -alkylcarbonyl, it being possible for the phenyl radical of the three last-mentioned substituents to be partially or fully halogenated and/or to carry one to three of the following radicals:

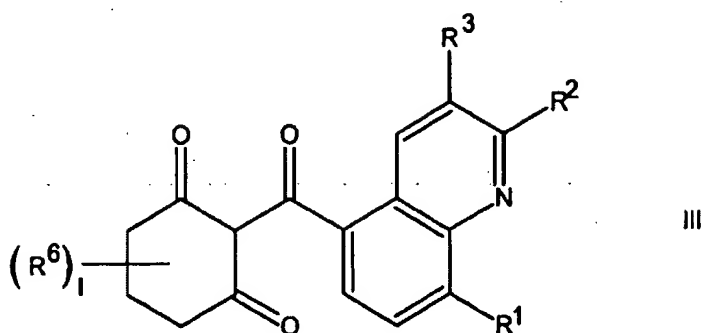
nitro, cyano,  $C_1-C_4$ -alkyl,  $C_1-C_4$ -haloalkyl,  $C_1-C_4$ -alkoxy or  $C_1-C_4$ -haloalkoxy;

$R^{10}$  is  $C_1-C_6$ -alkyl or  $C_1-C_6$ -alkoxy;

$R^{11}$  is  $C_1-C_6$ -alkyl.

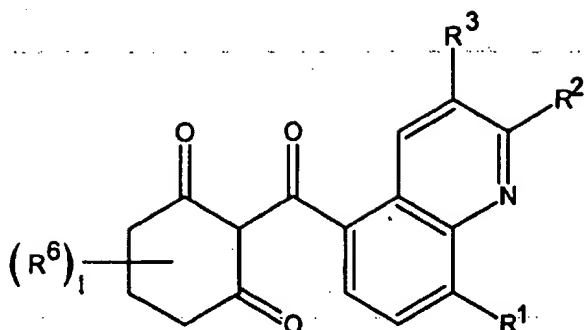
17 18. (previously presented) A process for preparing compounds of the formula I as claimed in claim <sup>13</sup> 14 where  $R^5$  = halogen, which comprises reacting a

cyclohexanedione derivative of the formula III,



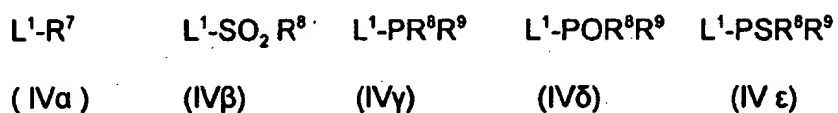
where the variables  $R^1$  to  $R^3$ , and  $I$  are each as defined in claim 14, with a halogenating agent.

- <sup>18</sup>  
18. (previously presented) A process for preparing compounds of the formula I as claimed in claim <sup>13</sup>14 where  $R^5 = OR^7$ ,  $OSO_2R^8$ ,  $OPR^8R^9$ ,  $OPOR^8R^9$  or  $OPSR^8R^9$ , which comprises reacting a cyclohexanedione derivative of the formula III,



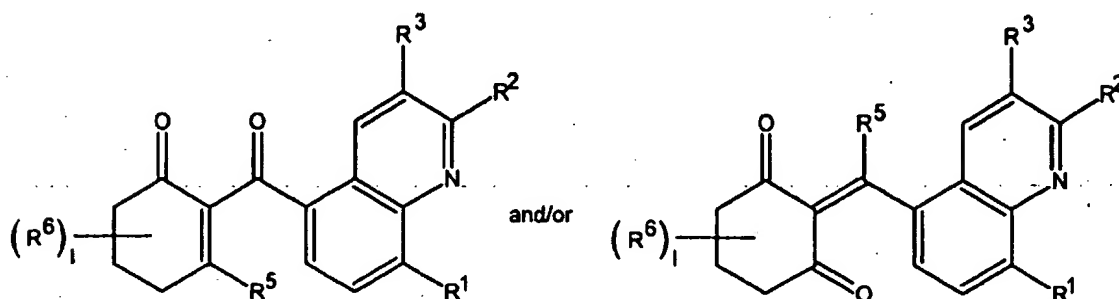
III

where the variables  $R^1$  to  $R^3$ , and  $I$  are each as defined in claim 14, with a compound of the formula IV $\alpha$ , IV $\beta$ , IV $\gamma$ , IV $\delta$  or IV $\epsilon$ ,



where the variables  $R^7$  to  $R^9$  are each as defined in claim 14 and  $L^1$  is a nucleophilically replaceable leaving group.

19 20. (currently amended) A process for preparing compounds of the formula I as claimed in claim 13 where  $R^5 = OR^7, SR^7, POR^8R^9, NR^{10}R^{11}, ONR^{11}R^{12}$ , or N-linked



where the variables R<sup>1</sup> to R<sup>3</sup>, and I are each as defined in claim 14, with a compound of the formula V<sub>α</sub>, V<sub>β</sub>, V<sub>γ</sub>, V<sub>δ</sub>, V<sub>ε</sub>, V<sub>η</sub>, V<sub>α</sub>, V<sub>β</sub>, V<sub>γ</sub>, V<sub>δ</sub>, V<sub>ε</sub>, V<sub>η</sub>, V<sub>θ</sub>,

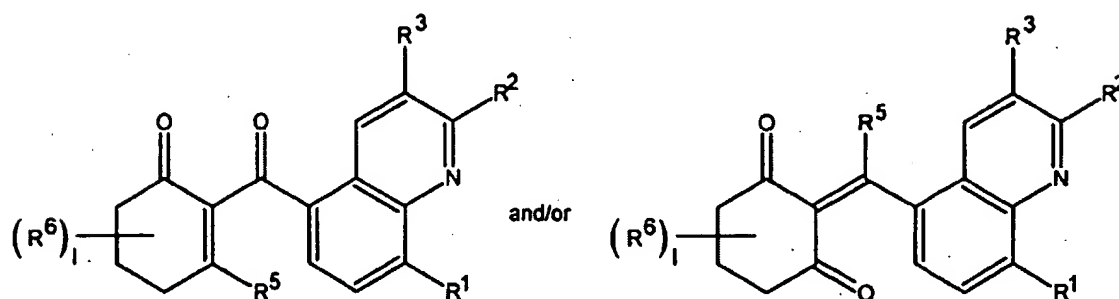
HOR <sup>7</sup>	HSR <sup>7</sup>	HPOR <sup>8</sup> R <sup>9</sup>	HNR <sup>10</sup> R <sup>11</sup>	HONR <sup>11</sup> R <sup>12</sup>
(Va)	(Vβ)	(Vγ)	(Vδ)	(Vε)
H(N-linked heterocyclyl)		H(ON-linked heterocyclyl)		
Vη		Vθ		

where the variables  $R^7$  to  $R^{12}$  are each as defined in claim 14, if

appropriate in the presence of a base.

20

21. (previously presented) A process for preparing compounds of the formula I as claimed in claim 14 where  $R^5 = \text{SOR}^8$ ,  $\text{SO}_2\text{R}^8$ , which comprises reacting a compound of the formula I $\beta$  ( $=$ I where  $R^5 = \text{SR}^8$ ),



I where  $R^5 = \text{SR}^8$

where the variables  $R^1$  to  $R^5$ ,  $R^7$ ,  $R^8$  and I are each as defined in claim 14, with an oxidizing agent.

21

22. (currently amended) A composition, comprising a herbicidally effective amount of at



least one cyclohexenonequinolinoyl <sup>compound</sup> derivative of the formula I or an agriculturally useful salt of formula I as claimed in claim 14 and conventional crop protection formulation auxiliaries ~~which are conventionally used for formulating crop protection agents.~~

<sup>22</sup>  
23. (currently amended) A process for preparing a composition as claimed in claim 22, which comprises mixing a herbicidally effective amount of at least one cyclohexenonequinolinoyl derivative of the formula I or an agriculturally useful salt of formula I and conventional crop protection formulation auxiliaries ~~which are conventionally used for formulating crop protection agents.~~

<sup>23</sup>  
24. (previously presented) A method for controlling undesirable vegetation, which comprises allowing a herbicidally effective amount of at least one cyclohexenonequinolinoyl <sup>compound</sup> derivative of the formula I or an agriculturally useful salt of formula I as claimed in claim 14 to act on plants, their habitat and/or on seeds.

25. (canceled)